

Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims

1-35. (Canceled)

36. (Original) A program storage device readable by a machine tangibly embodying a program of instruction executable by the machine to perform method steps for improving layer side surfaces of layer areas to be filled by layered manufacturing, the method steps comprising:

obtaining first curve data representing at least one layer area to be filled with a first material; and

generating second curve data representing a second layer area to be filled with a second material, such that said second layer area side surface abuts said first layer area side surface over at least a portion of said first curve.

37. (Original) A program storage device as in claim 36, wherein said obtaining and generating steps are executed at least once for each of a plurality of stacked layers for which said layer side surface improving is desired.

38. (Original) A program storage device readable by a machine tangibly embodying a program of instruction executable by the machine to perform method steps for providing support underneath material layer areas to be filled by layered manufacturing, the layer areas including first material areas to be filled with a first material, the method steps comprising:

obtaining a first data set having a plurality of first layer data sets representing said layer areas to be filled by layered manufacturing; and

generating a second data set having a plurality of second layer data sets representing support layer areas to be filled by layered manufacturing,

wherein said first layer data sets define unsupported structures defining void volumes underneath said unsupported structures, wherein said second layer data sets define support structures having a support structure volume and supporting said unsupported structure, wherein said support structure volumes are substantially less than said void volumes.

39. (Original) A program storage device as in claim 38, wherein said generating step includes:

- (a) selecting a pair of layers having an upper layer and an immediately lower layer;
- (b) reducing the area of said pair upper area by an increment;
- (c) determining any portion of said upper layer unsupported by said lower layer;
- (d) creating a new support area for said pair lower layer;
- (e) adding said new support area to said lower layer; and
- (f) repeating steps (a) through (e) for a plurality of said layer pairs by setting said pair lower layer to be said pair upper layer in the next iteration.

40. (Original) A program storage device readable by a machine tangibly embodying a program of instruction executable by the machine to perform method steps for providing support underneath layer areas to be filled by layered manufacturing, the layer areas including first material areas to be filled with a first material and second material areas to be filled with a second material, the method steps comprising:

obtaining a pair of layer area data sets having a first upper layer data set representing said first upper layer area, and a first lower layer data set representing a lower layer area to be filled with said first material;

generating a second upper layer data set representing a second upper layer area which is a subset of said first upper layer area and has an area less than that of said second

obtaining first curve data representing at least one layer area to be filled with a first material

obtaining first curve data representing at least one layer area to be filled with a first material; and

generating second curve data representing a second layer area underneath said first layer area to be filled with a second material, such that said second layer area is less than said first layer.

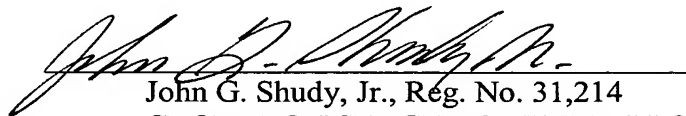
Respectfully submitted,

Vikram Jamalabad et al.

By his Attorney,

Date:

1/20/04



John G. Shudy, Jr., Reg. No. 31,214
CROMPTON, SEAGER & TUFTE, LLC
1221 Nicollet Avenue, Suite 800
Minneapolis, Minnesota 55403-2420
Telephone: (612) 677-9050
Facsimile: (612) 359-9349